STS-102 Flight Readiness Review (FRR) Minutes

The STS-102 FRR convened at 10 a.m. on Tuesday, February 27, 2001, in the Mission Briefing Room, at the Kennedy Space Center (KSC). The meeting was chaired by R. Estess, Space Shuttle Program Lead Center Acting Director.

Flight Crew, Ferry Readiness, Range, and DDMS did not have any issues or constraints to flight and did not make formal presentations. Readiness statements submitted were included in the backup package.

The STS-102 FRR presenters were:

Mission Summary - J. Shannon (NASA/JSC/DA8), R. LaBrode (NASA/JSC/DA8)
Program Integration - V. Ellerbe (NASA/JSC/MA2), R. White (USA/JSC/USJ-601M);
International Space Station - B. Dickey (NASA/JSC/OC), A. Wetterstroem (NASA/JSC/EA5), C. Dempsey (NASA/JSC/OX), M. Suffredini (Boeing/Canoga Park/LB03), M. Geyer (NASA/JSC/OM5), W. Panter (Boeing/JSC/OD), V. Feng (NASA/JSC/OZ211), S. Prejean (Boeing/JSC/OA), E. Gholdston (Boeing/Cangoa Park/LA-73), J. Leggett (NASA/JSC/ES), C. Hatfield (NASA/JSC/OM7), P. Thomas (Boeing/Houston/JHOU-2340), R. Nygren (NASA/JSC/OZ111)
Payload Processing – G. Chin (NASA/KSC/UB-1)
External Tank – G. Copeland (LMSSC/MSFC/3000)
RSRM – T. Boardman (Thiokol/Utah/L00)
SRB – R. Elliott (USA/ksc/usk-417)
SSME – G. Hopson (NASA/MSFC/MP21)
Vehicle Engineering - D. White (USA/Houston/USH-601M)
EVA – G. Guirgis (Hamilton Sundstrand/JSC/XA/HAM)
Shuttle Processing - J. Vevera (USA/KSC/ USK-229), M. Leinbach (NASA/KSC/PH), D. King (NASA/KSC/PH), E. Adamek (USA/KSC/USK-383), C. Murphy (USA/KSC/USK-C59)
Mission Operations - J. Bantle (NASA/JSC/DA8), T. Sobchak (NASA/GSFC/451), R. Gest (USA/Houston/USH-402C)
Space and Life Sciences - D. Williams (NASA/JSC/SA)
SR&QA - M. Erminger (NASA/JSC/MQ).

Mission Summary

This mission is 5A.1 in the International Space Station (ISS) assembly sequence. It involves crew rotation, logistics delivery and prepares the ISS to receive the Space Station Remote Manipulator System on 6A. This flight is the first direct insertion to 122 Nautical Mile (NM) apogee also the first flight of the Multi-Purpose Logistics Module (MPLM) Leonardo.

Program Integration

The first Crew rotation will take place; Shepherd, Krikalev & Gidzenko will return and Usachev, Voss & Helms will remain. With the completion of open work Space Shuttle Program Integration is ready for flight.

International Space Station (ISS)

Mission Integration and Operations presented one special topic: the Treadmill with Vibration Isolation System (TVIS) Anomaly Resolution Status. Two issues were

presented involving the TVIS cable wire assembly failure and the TVIS damaged belt slats. The TVIS is operational with minimal constraints.

The Vehicle Office presented two special topics including the MPLM Launch-to-Activation Heaters and the Ground Fault Circuit Interrupter tripping. Rationale for flight was presented.

A walk on topic concerning the Johnson Space Center predictions of Mir Space Station Decay Profile was presented. The decay profile predicts a splashdown during the STS-102 mission. This is not predicted to be an impact for this mission.

The ISS program is ready to proceed to the launch of ISS 5A.1/STS-102.

Payload Processing

There were two Operations and Maintenance Requirements Specification Waivers discussed for the MPLM. The first waiver involved the MPLM Flight Module-1 Off Gas Test and the second waiver involved the MPLM Common Berthing Mechanism Course Alignment Guide measurement. The planned closure date for these waivers is March 2, 2001.

External Tank (ET)

There were two waivers presented: the Liquid Oxygen tank Thermal Protection System does not meet the launch probability "no-ice" requirement and the Liquid Hydrogen feedline contamination. Both of these waivers have been approved at the Program Requirements Change Board. The ET is certified and ready for STS-102 flight pending completion/closure of open and planned work.

Reusable Solid Rocket Motor (RSRM)

Pending satisfactory completion of normal operations flow, the RSRM hardware is ready to support flight for mission STS-102.

Solid Rocket Booster (SRB)

One Class I change since STS-98 is the first flight of the BST Battery. Two technical issues were presented on the cable inspection and the upper strut connector. Rationale for flight was presented. Pending completion of standard open work, there are no constraints to flight for STS-102.

Space Shuttle Main Engine (SSME)

The Discovery Main Engines are in a ready condition for STS-102.

Vehicle Engineering

This is the first flight for all three Water Spray Boilers that have been serviced with Propylene Glycol Monomethyl Ether. Pending completion of scheduled open work, the Orbiter Vehicle support hardware, Flight Crew Equipment and Software are certified and ready to support.

Extravehicular Activity (EVA)

There were two special topics presented. The first topic discussed the loose weld plug from extravehicular maneuvering/mobility unit fan/pumps/separator that failed during

testing after refurbishment. The recovery plan for this mission involves using welded plugs that have already been verified acceptable. The second topic was the phase IV glove damage from the 12-volt heater. Managing heater "on time" to control the temperature will be used to control the hazard of potentially deforming the bladder for this flight.

The EVA Project Office is ready to proceed with 5A.1 launch and on-orbit stage operations pending completion of the planned forward work.

Shuttle Processing

Completion of planned work and resolution of any identified constrains, Kennedy Space Center Shuttle Processing and Supporting Organizations are ready to support Launch Operations.

Mission Operations

There were two special topics presented. The first topic was the Operational Increment (OI) – 28 I-Load Uplink Schedule. The background, approval and verification schedule and the implementation plan were presented. The second topic was the Direct Insertion to 122 NM. Mission Operations is ready to support the launch of STS-102.

Space and Life Sciences

There are no constraints to proceeding with the planned Flight 5A.1/STS-102, Increment 2 and 3P pending completion of scheduled open work.

Safety, Reliability and Quality Assurance

With the satisfactory completion of identified open work, Safety and Mission Assurance has no constraints to STS-102/5A.1.

Action Items/Exceptions

There were no action items assigned. One exception was submitted.

Mr. Estess polled the principal managers and organizations; all responded that they were prepared to support the STS-102 mission.

James D. Halsell, Jr.
Colonel, USAF
Manager, Launch Integration

Enclosure:
Agenda
Exception Log

STS-102
Flight Readiness Review
February 27, 2001

Agenda

Introduction	Manager, Launch Integration
Mission Summary	Flight Director, Mission Operations
Program Integration	Flight Manager Manager, Space Shuttle KSC Integration Manager, Space Shuttle Systems Integration Manager, Space Shuttle Customer and Flight Integration APM, Program Integration, SFOC
International Space Station	Manager, International Space Station Program
Payload Processing	Director of ISS/Payloads Processing
External Tank	Manager, External Tank Project
RSRM	Manager, Reusable Solid Rocket Motor Project
SRB	Manager, Solid Rocket Booster Project APM, SRB Element, SFOC
SSME	Manager, Space Shuttle Main Engine Project
Vehicle Engineering	Manager, Space Shuttle Vehicle Engineering APM, Orbiter Element, SFOC APM, Flight Software, SFOC APM, FCE/EVA, SFOC
EVA	Manager, EVA Project
Shuttle Processing	Director of Shuttle Processing APM, Ground Operations, SFOC APM, Integrated Logistics, SFOC
Mission Operations	Director, Mission Operations APM, Flight Operations, SFOC
Flight Crew	Director, Flight Crew Operations
Space and Life Sciences	Director, Space and Life Sciences
Ferry Readiness	Ferry Operations Manager
Range	United States Air Force
DDMS	Director, DDMS
SR&QA	Manager, Safety, Reliability & Quality Assurance
Exception/Action Summaries	Manager, Launch Integration
Readiness Poll	Lead Center Director for Space Shuttle and Space Station Programs

CoFR EXCEPTION LOG

CoFR REVIEW DATE: 02-27-01

STS FLT NO. STS-102

REQUIREMENT/ EXCEPTION NUMBER	ELEMENT	DESCRIPTION OF EXCEPTION	DUE DATE
001	EXTRA-VEHICULAR MOBILITY UNIT	ACCEPTABILITY OF UNEXPLAINED ANOMALIES, PROBLEMS AND IFA'S. AWAITING INTERIM CLOSURE OF ANOMALY J-EMU-106--020 NOMENCLATURE: GLOVE ASSEMBLY, PHASE VI PART NUMBER: 0106-110106 SERIAL NUMBERS: 6072, 6075, 6071, 6077, 6059, 6058, 6078, 6079, 6060, AND 6061	**STS-102 PMMT**